

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-333788

(43)Date of publication of application : 07.12.1999

(51)Int.Cl.

B26D 7/01

(21)Application number : 10-142778

(71)Applicant : CARL JIMUKI KK

(22)Date of filing : 25.05.1998

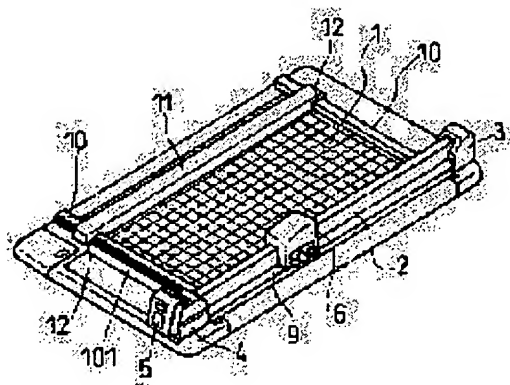
(72)Inventor : MORI MAKOTO

(54) POSITIONING STRUCTURE OF PAPER SETTING RULE

(57)Abstract:

PROBLEM TO BE SOLVED: To easily position a paper setting rule, to surely fix the rule on a paper table and to eliminate the variance in positioning the paper setting rule.

SOLUTION: In a positioning structure, a square rule 10 with an uneven positioning surface 101 formed thereon is fixed to a paper table 1, and a paper setting rule 11 with an uneven engaging surface formed thereon as an engagement part 12 to be engaged with the uneven positioning surface 101 is provided. When the paper setting rule 11 is positioned, the uneven positioning surface 101 is disengaged from the uneven engaging surface and shifted to a desired position, and then, the uneven positioning surface 101 is engaged with the uneven engaging surface.



LEGAL STATUS

[Date of request for examination]

10.03.2003

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

*** NOTICES ***

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] While preparing the rail for moving an edge to the edge of **** in the shape of a straight line In the positioning structure of the **** ruler of the cutter which fixed the guide ruler to the aforementioned **** so that it might become right-angled to this rail by the aforementioned guide ruler Positioning structure of the **** ruler characterized by having formed the positioning irregularity side which consists of heights of a ** pitch interval, and forming in the aforementioned **** ruler the engagement irregularity side which gears to the positioning irregularity side of the aforementioned guide ruler.

[Claim 2] While preparing the rail for moving an edge to the edge of **** in the shape of a straight line In the positioning structure of the **** ruler of the cutter which set two guide rulers and fixed the predetermined interval to the aforementioned **** for them in parallel so that it might become right-angled to this rail by two aforementioned guide rulers Positioning structure of the **** ruler characterized by forming in the ends the engagement irregularity side which gears by the aforementioned **** ruler in the positioning irregularity side of the aforementioned guide ruler while forming the positioning irregularity side which consists of heights of a ** pitch interval, respectively.

[Claim 3] Positioning structure of the **** ruler according to claim 1 or 2 characterized by establishing a positioning irregularity side in the outside side of the guide ruler fixed to ****.

[Claim 4] Positioning structure of the **** ruler according to claim 1 or 2 characterized by establishing a positioning irregularity side in the upper surface of the guide ruler fixed to ****.

[Claim 5] Positioning structure of a **** ruler given [respectively] in the claims 1-4 characterized by having considered as one pitch from one paper present of a **** ruler, and making it a half-pitch from other paper present in the engagement irregularity side established in the **** ruler.

[Translation done.]

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the positioning structure of a **** ruler where the position gap of a **** ruler was lost while making positioning of a **** ruler easy in more detail about the **** ruler used for the cutter which cuts out paper etc.

[0002]

[Description of the Prior Art] First, the outline of a typical paper cutter is explained using drawing 5. The rail 2 is formed so that a paper cutter may meet the long side end side of rectangle plate-like **** 1, the end of this rail 2 is held at the attaching part 3, and the other end of a rail 2 is raised only for a predetermined angle. Moreover, two guide rulers 7 are being fixed to **** 1 in parallel right-angled to the rail 2, these two guide rulers 7 are built, and the **** ruler 8 is formed so that it can move along with the guide ruler 7.

[0003] And when cutting out paper, according to the size of paper to cut out, the position of the **** ruler 8 is adjusted beforehand. Fix the **** ruler 8 to the guide ruler 7, and the other end of a rail 2 is rotated up. Carry paper on **** 1 so that it may be located between a rail 2 and **** 1, and concentrate a rail 2 in the state where the first transition of paper was made to contact the **** ruler 8, and the stop presser foot stitch tongue 5 formed at the nose of cam of a rail 2 is stopped in the stop section 4 prepared in **** 1. Paper is fixed to it as paper is inserted between the paper presser-foot boards 9 formed in the upper surface of **** 1, and the inferior surface of tongue of a rail 2. And by moving a slider 6 along with a rail 2, while the rotary knife currently held at the slider 6 rotates, paper is cut out.

[0004] Positioning and fixation of the above-mentioned **** ruler 8 were performed as follows in the former. That is, the rear face and **** 1 of the **** ruler 8 are equipped with a magnet, and the magnetism of this magnet is resisted, the **** ruler 8 is moved, and it positions, and was made to fix the **** ruler 8 to **** by this magnetism. Moreover, a screw is made to screw in the screw hole 801 prepared in the ends of the **** ruler 8, where this screw is loosened, the **** ruler 8 is moved and positioned along with the guide ruler 7, a screw is bound tight after that, and it was made to fix the **** ruler 8 to the guide ruler 7 as other meanses, as shown in drawing 5.

[0005]

[Problem(s) to be Solved by the Invention] There is a problem described below in positioning and fixation of the **** ruler 8 of the above-mentioned former. First, if it is in the thing using the magnet, when a worker's hand touches when judging, or the suction force of this magnet was weak and paper contacts, the **** ruler 8 shifts simply and there is a problem of it becoming impossible to cut out paper in a desired size. Moreover, if a magnetic suction force is strengthened in order to solve this problem, since **** 1 will be powerfully adsorbed in the **** ruler 8, a gap of the positioned **** ruler 8 produces new problems -- fine tuning at the time of fixing the **** ruler 8 to a position becomes difficult -- although canceled.

[0006] Next, in the thing using the screw mechanism, easily [setting the **** ruler 8 by the desired position], it is certainly fixed to the guide ruler 7, and is satisfactory in the point that the **** ruler 8 does not shift. However, while performing repeat positioning, the remains of a screw may be attached to the guide ruler 7, and the portion may be damaged gradually. thus, when the front face of the guide ruler 7 which a screw hits has been damaged Since the nose of cam of the screw bound tight is guided to this injury portion and moves, exact position ***** of the **** ruler 8 becomes impossible. when an injury grade is still larger Since the fixed intensity of the **** ruler 8 falls, when a worker's hand touches or paper contacts, there is a problem that the **** ruler 8 shifts.

[0007] moreover, if it is in the thing using the above-mentioned magnet and the screw mechanism, since positioning of the **** ruler 8 performs the **** ruler 8 for the ruled line the criteria of the positioning were written to be to **** 1 by eye measurement, all, the position of the **** ruler 8 may come delicately and becomes things Moreover, since there are some crevices (the so-called backlash) in fitting between the guide ruler 7 and the **** ruler 8, an error may

arise in the parallelism of a rail 2 and a **** ruler. After following, for example, positioning the **** ruler 8 and cutting out paper in the size of specification paper B5, perform position ***** of the **** ruler 8, and cut out paper in A4 size shortly, and the **** ruler 8 is moved. When paper is cut out in the size of B5 and there is an error of a minute gap of positioning of the **** ruler 8 or parallelism as mentioned above, the problem that a non-set arises is between the thing of B5 size judged previously, and the thing of B5 size judged later.

[0008] Therefore, possible [working positioning of a **** ruler easily], it can certainly fix on **** and this invention offers the positioning structure of the **** ruler it was made not to have variation in **** ruler positioning further.

[0009]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, claim 1 publication then While preparing the rail for moving an edge to the edge of **** in the shape of a straight line In the positioning structure of the **** ruler of the cutter which fixed the guide ruler to the aforementioned **** so that it might become right-angled to this rail by the aforementioned guide ruler The positioning irregularity side which consists of heights of a ** pitch interval is formed, and it is characterized by forming in the aforementioned **** ruler the engagement irregularity side which gears to the positioning irregularity side of the aforementioned guide ruler.

[0010] While preparing the rail for moving an edge to the edge of **** in the shape of a straight line in invention according to claim 2 In the positioning structure of the **** ruler of the cutter which set two guide rulers and fixed the predetermined interval to the aforementioned **** for them in parallel so that it might become right-angled to this rail by two aforementioned guide rulers While forming the positioning irregularity side which consists of heights of a ** pitch interval, respectively, it is characterized by forming in the ends the engagement irregularity side which gears to the positioning irregularity side of the aforementioned guide ruler at the aforementioned **** ruler.

[0011] In invention according to claim 3, it is characterized by establishing a positioning irregularity side in the outside side of the guide ruler fixed to ****.

[0012] In invention according to claim 4, it is characterized by establishing a positioning irregularity side in the upper surface of the guide ruler fixed to ****.

[0013] In invention according to claim 5, it is characterized by having considered as one pitch from one paper present of a **** ruler, and making it a half-pitch from other paper present in the engagement irregularity side established in the **** ruler.

[0014] invention according to claim 1 -- setting -- etc. -- by fixing to **** the guide ruler in which the positioning irregularity side which consists of heights of a pitch interval was formed, and forming the **** ruler in which the engagement irregularity side which gears to the positioning irregularity side of this guide ruler was formed When positioning a **** ruler, in the state where engagement between a positioning irregularity side and an engagement irregularity side was removed, performed and positioned, the state of engagement with a positioning irregularity side and an engagement irregularity side is held.

[0015] Set two guide rulers in which the positioning irregularity side which consists of heights of a pitch interval was formed, and a predetermined interval is fixed to **** for them in parallel. next, invention according to claim 2 -- setting -- etc. -- When positioning a **** ruler by forming the **** ruler in which the engagement irregularity side which gears to this positioning irregularity side was formed to ends in the ends, respectively In the state where engagement between the positioning irregularity sides and engagement irregularity sides which were established in the ends of a **** ruler was removed, performed and positioned, the state of engagement with a positioning irregularity side and an engagement irregularity side is held, and the ends of a **** ruler are fixed.

[0016] Next, in invention according to claim 3, the inside of a guide ruler is used as a locating face of paper by establishing a positioning irregularity side in the outside side of the guide ruler fixed to ****.

[0017] In invention according to claim 4, fitting with a positioning irregularity side and an engagement irregularity side is easily performed by establishing a positioning irregularity side in the upper surface of the guide ruler fixed to ****.

[0018] In a means according to claim 5, in the engagement irregularity side established in the **** ruler, since it considered as one pitch from one paper present of a **** ruler and was made the half-pitch from other paper present, when the both-sides side of a **** ruler is used as a paper reliance side, minute adjustment of a paper reliance side is attained.

[0019]

[Embodiments of the Invention] Hereafter, the gestalt of implementation of invention is explained in detail. Below, the important section of this invention is explained. In drawing 1 , the positioning irregularity side 101 which consists of heights of a ** pitch interval and a crevice is formed in the lateral surface of the guide ruler 10 fixed to **** 1 in which the graduation was formed in all directions. And the **** ruler 11 in which the engagement section 12 which gears to the positioning irregularity side 101 of the guide ruler 10 as shown in drawing 2 was formed is formed.

[0020] Drawing 3 is drawing having expanded and shown the A section (engagement section 12) in drawing 2 , and is

width of face W1 and the depth H1 in the ends of the **** ruler 11. The crevice is formed and the engagement irregularity side 121 is formed in the outside perpendicular inside of this crevice. In formation of this engagement irregularity side 121, the pitches of the engagement irregularity side 121 by the side of the paper reliance side 111 of the **** ruler 11 are the half-pitches P/2, and the paper reliance side 112 side of an opposite side has become the 1 pitch P. Thus, the following proper use can be carried out by using the both-sides side of the **** ruler 11 properly as paper reliance sides 111 and 112, and establishing the engagement irregularity side 121 in this way.

[0021] For example, when the paper reliance side 112 is used as $P = 2\text{mm}$ of pitches, it sets. By being able to position with an even number size like 2mm, 4mm, and 6mm, and rotating 180 degrees of **** rulers 11, and setting to the guide ruler 10, if it shifts one pitch of **** rulers 11 at a time When the paper reliance side 111 side is used, the position of the **** ruler 11 can be adjusted with an odd number size like 1mm, 3mm, 5mm, and 7mm. Moreover, for example, when the paper reliance side 112 is used as $P = 1\text{mm}$ of pitches, it sets. If it shifts one pitch of **** rulers 11 at a time, it can position by 1mm serration like 1mm, 2mm, and 3mm. Moreover, when the paper reliance side 111 side is used by rotating 180 degrees of **** rulers 11, and setting to the guide ruler 10, a position can be adjusted with the middle size of the paper reliance side 112 like 0.5mm, 1.5mm, 2.5mm, and 3.5mm.

[0022] The guide ruler 10 is width of face W2, as shown in drawing 4. And height H2 It is made of the square bar and the locating face 101 of the same pitch P to which the engagement irregularity side 121 shown in drawing 3 engages with the side is formed. Moreover, this width of face W2 Width of face W1 of the crevice established in the edge of the **** ruler 11 shown in drawing 3 It is almost equal. Thus, width of face W1 and W2 While lessening the locational error of the **** ruler 11 by making it almost equal and lessening engagement backlash between the positioning irregularity side 101 and the engagement irregularity side 121, it is made to maintain the parallelism between a rail 2 and the **** ruler 11, as the **** ruler 11 cannot be aslant engaged to a rail 2. moreover -- height -- $H1 > H2$ ***** - it is made for the base 113 of the **** ruler 11 in drawing 3 to stick to the field of **** 1, and is made for the paper put on **** 1 not to escape from the crevice between the front face of **** 1, and the base 113 of the **** ruler 11

[0023] Moreover, although the positioning irregularity side 101 shown in drawing 1 and drawing 4 is established in the side of the guide ruler 10, you may make it establish it in the upper surface of the guide ruler 10 which fixed this positioning irregularity side 101 to **** 1. In this case, the engagement irregularity side 121 in drawing 3 is established in the base 114 of a crevice. Thus, since there is a possibility that the **** ruler 11 may come floating when it considers as the composition which engages the upper surface of the guide ruler 10, and the base 114 of the **** ruler 11, it is good also as composition which equipped the rear face and **** 1 of the **** ruler 11 with the magnet. Thus, since the **** ruler 11 will be energized caudad and it will gear certainly by the guide ruler 10 in order that the **** ruler 11 may stick to **** 1 by equipping with a magnet, the relief of the **** ruler 11 is prevented. In addition, in drawing 1, the same sign is given to the same portion as drawing 5, and the explanation is omitted.

[0024] Next, an operation is explained. drawing 1 -- setting -- etc., as the guide ruler 10 in which the positioning irregularity side 101 which consists of heights of a pitch interval and a crevice was formed is fixed to **** 1 and it is shown in drawing 3 When positioning the **** ruler 11 by forming the **** ruler 11 in which the engagement irregularity side 121 which gears to the positioning irregularity side 101 of this guide ruler 10 was formed So that may lift the **** ruler 11 upwards, engagement between the positioning irregularity side 101 and the engagement irregularity side 121 may be removed, the **** ruler 11 may be made into a position and the positioning irregularity side 101 and the engagement irregularity side 121 may be engaged In the state where it carried out and positioned, the state of engagement with the positioning irregularity side 101 and the engagement irregularity side 121 is held by depressing the **** ruler 11.

[0025] moreover, drawing 1 -- setting -- etc., as two guide rulers 10 in which the positioning irregularity side 101 which consists of heights of a pitch interval and a crevice was formed are fixed to **** 1 in parallel and it is shown in drawing 3 When positioning the **** ruler 11 by forming the **** ruler 11 in which the engagement irregularity side 121 which gears to this positioning irregularity side 101 was formed to ends After removing engagement between the positioning irregularity sides 101 and the engagement irregularity sides 121 which lifted the **** ruler 11 upwards and were established in ends Locate the **** ruler 11 in a predetermined place, and it carries out by pushing in so that the engagement irregularity side 121 may gear with the positioning irregularity side 101. Moreover, in the state where it positioned, the state of engagement with the positioning irregularity side 101 and the engagement irregularity side 121 can be held, and the ends of the **** ruler 11 can be fixed. Moreover, the inside of the guide ruler 10 is used as a locating face of paper by establishing the positioning irregularity side 101 in the outside side of the guide ruler 10 fixed to **** 1. Furthermore, fitting with the positioning irregularity side 101 and the engagement irregularity side 121 can be easily performed by establishing the engagement irregularity side 121 in the base 114 of the crevice which established the positioning irregularity side 101 in the upper surface of the guide ruler 10 fixed to one paper, and was established in the ends of the **** ruler 11. About other operations, it is the same as what established the positioning

irregularity side 101 in the side of the guide ruler 10.

[0026] Next, since the pitch of the engagement irregularity side 121 was made into 112 to 1 pitch P for the time being [one paper / of the **** ruler 11] in the engagement irregularity side 121 prepared in the **** ruler 11 as shown in drawing 3 and it was made the half-pitches P/2 from 111 for the time being / other papers /, when the both-sides side of the **** ruler 11 is used as a paper reliance side, minute positioning of 111 and 112 becomes possible for the time being / paper /.
 [0027] In the gestalt of operation of this invention, since drawing 1 shows what applied this invention to the most typical paper cutter explained by drawing 5, it is not limited only to the use to the paper cutter of such composition. Moreover, although two guide rulers 10 are considering as the composition currently fixed in parallel with **** 1, either is omitted, the obstruction on **** 1 is lost, and it may be made to make the upper surface of **** 1 large. In this case, a positioning irregularity side is established in the side of **** 1 of the side which omitted the guide ruler 10. Although considered as the composition with which both 10 and 11 are made to engage by forming a concavo-convex side in the guide ruler 10 and the **** ruler 11 as positioning structure of the **** ruler 11 in the gestalt of operation of this invention, it is still better also as composition which prepared the cam instead of forming the engagement irregularity side 121 in the **** ruler 11. In this case, it can position, when the cam prepared in the **** ruler 11 engages with the positioning irregularity side 101 of the guide ruler 10, and since it becomes possible to slide on the **** ruler 11 along with the guide ruler 10, positioning can be made easier.

[0028]

[Effect of the Invention] According to this invention according to claim 1, the guide ruler in which the positioning irregularity side was formed is fixed to ****. The **** ruler in which the engagement irregularity side which gears to the positioning irregularity side of this guide ruler was formed is formed. at the time of positioning of a **** ruler Since engagement between a positioning irregularity side and an engagement irregularity side is removed, it shifts in a desired position and it should just engage between a positioning irregularity side and an engagement irregularity side again Since the state of engagement with a positioning irregularity side and an engagement irregularity side is held in the state where could abolish the variation in positioning and it positioned while being able to make positioning of a **** ruler easy, a **** ruler is certainly fixable on ****.

[0029] Next, according to invention according to claim 2, two guide rulers in which the positioning irregularity side was formed are fixed to **** in parallel. When forming the **** ruler in which the engagement irregularity side which gears to this positioning irregularity side was formed to ends and positioning a **** ruler Since engagement between the positioning irregularity sides and engagement irregularity sides which were established in the ends of a **** ruler is removed, it shifts in a desired position and it should just engage between a positioning irregularity side and an engagement irregularity side again positioning of a **** ruler, since the ends of a **** ruler are fixed to a guide ruler, respectively while being able to make it easy In the state where could abolish the variation in positioning and it positioned, the state of engagement with a positioning irregularity side and an engagement irregularity side can be held, and a **** ruler can certainly be fixed on ****.

[0030] Next, according to invention according to claim 3, since the positioning irregularity side was established in the outside side of a guide ruler, paper can be easily cut out by using the medial surface of a guide ruler as a locating face of paper.

[0031] Since the positioning irregularity side was established in the upper surface of the guide ruler fixed to **** according to invention according to claim 4, fitting with a positioning irregularity side and an engagement irregularity side can be easily performed now, and positioning of a **** ruler can be performed well.

[0032] Since according to invention according to claim 5 the engagement irregularity side of a **** ruler is formed so that it may consider as one pitch from one paper present of a **** ruler and may become a half-pitch from other paper present Since it was made to perform minute positioning of a paper reliance side by making the sense of a **** ruler reverse when using the both-sides side of a **** ruler as a paper reliance side, positioning of the **** ruler by fitting between a positioning irregularity side and an engagement irregularity side is attained.

[Translation done.]

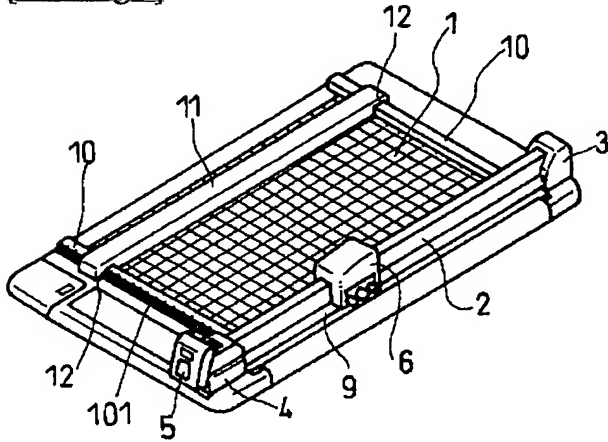
* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

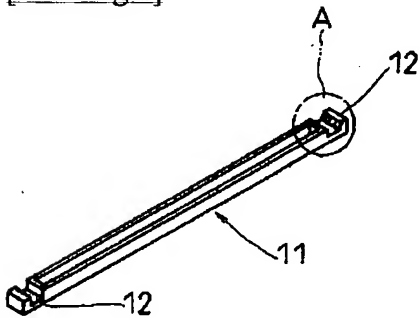
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

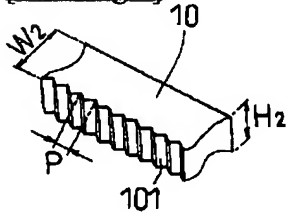
[Drawing 1]



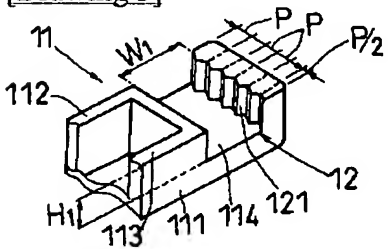
[Drawing 2]



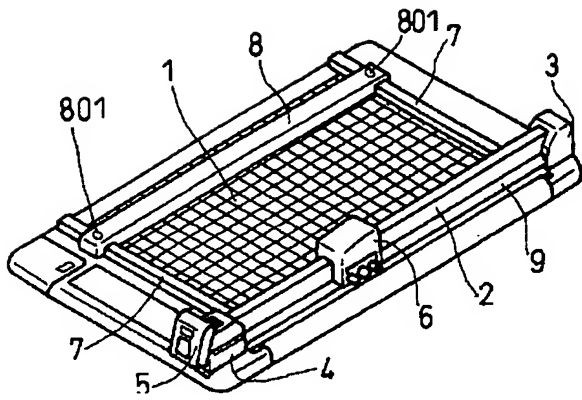
[Drawing 4]



[Drawing 3]



[Drawing 5]



[Translation done.]